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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/371,612	08/10/1999	ERWIN HACKER	514413-3768	9453

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EXAMINER

CLARDY, S

ART UNIT

PAPER NUMBER

1616

DATE MAILED: 03/12/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/371,612	Applicant(s) Hacker et al
Examiner S. Mark Clardy	Art Unit 1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on Feb 27, 2003

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 16 and 23-37 is/are pending in the application.

4a) Of the above, claim(s) 16, 25, 29-31, and 35-37 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 23, 24, 26-28, and 32-34 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some* c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) The translation of the foreign language provisional application has been received.

15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____

2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) Other: _____

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Claims 16 and new claims 23-37 are pending in this application; it appears that claim 25 was intended to replace claim 16 which had been held withdrawn from consideration as being drawn to a non-elected species.

Applicants' claims are drawn to compositions and methods of using herbicidal compositions comprising the synergistic combination of A + B herbicides (see exceptions in the claim 23 proviso):

A) a broad spectrum herbicide

- A1: glufosinate¹
- A2: glyphosate²
- A3: imidazolinones (imazethapyr³, imazaquin⁴, imazamox⁵, imazapyr⁶)
- A4: protoporphyrinogen oxidase (PPO) inhibitors;

B) a second herbicide, except as noted (with optional safener):

- B1: trifluralin, metribuzin, clomazone, pendimethalin, metolachlor, flumetsulam, dimethenamid, alachlor, linuron, sulfentrazone, ethalfluralin, fluthiamide, norflurazone, vernolate, flumioxazin
- B2: chlortoluron, bentazone, thifensulfuron, oxyfluorfen, lactofen, fomesafen, flumichlorac, acifluorfen, 2,4-DB, 2,4-D, chlorimuron, diclosulam, fluthiacet, cloransulam, oxasulfuron
- B3: sethoxydim, cycloxydim, clethodim

¹Excluded B herbicides: cloransulam, metolachlor, metribuzin, chlorimuron, dimethenamid, pendimethalin, bentazone, clomazone, thifensulfuron, flumichlorac, flumetsulam, linuron, sethoxydim, acifluorfen, fomesafen, sulfentrazone, flumioxazin, lactofen, fenoxaprop-P

²Excluded B herbicides: metolachlor, dimethenamid, metribuzin, chlorimuron, pendimethalin, bentazone, linuron, acifluorfen

³Excluded B herbicides: metolachlor, bentazone, clomazone, thifensulfuron, flumiclorac, pendimethalin, trifluralin, sulfentrazone, lactofen, dimethenamid, acifluorfen, fenoxaprop-P

⁴Excluded B herbicides: pendimethalin, trifluralin, metolachlor

⁵Excluded B herbicides: bentazone and trifluralin

⁶Excluded B herbicide: metolachlor

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B4: quizalofop, fenoxaprop, fluazifop, haloxyfop, propaquizafop (and -P isomers)

B5: paraquat.

In Paper No. 9, applicant elected with traverse of the species comprising:

A1.2 glufosinate-ammonium⁷ and

B2.12 cloransulam-methyl⁸.

Examination has been expanded beyond the originally elected B component to encompass all B herbicides. In the discussion below, the parenthetical identifiers (A#.#) or (B#.#) refer to applicants' herbicide designations, e.g., glufosinate (A1.2).

Claims 16, 25, 29-31, and 35-37 have been held withdrawn as being drawn to a non-elected species (A is glyphosate). Note that glufosinate is a glutamine synthetase inhibitor which interferes with the assimilation of inorganic nitrogen, while glyphosate is a 5-enolpyruvylshikimate-3-phosphate synthase (EPSPS) inhibitor which interferes with the shikimate pathway in aromatic amino acid synthesis. Again, it appears that nonelected claim 16 should be canceled.

Claims 23, 24, 26-28, and 32-34 have been examined only insofar as they read on the elected species (glufosinate + B herbicides).

The rejection under 35 USC 102 is withdrawn in response to applicants' amendment and because the combinations recited in the previously cited reference (Johnson et al) are excluded by the proviso statement of claim 23, and are not present in claim 32.

⁷Ammonium 2-amino-4-(hydroxymethylphosphinyl)butanoate

⁸3-chloro-2-[[5-ethoxy-7-fluoro[1,2,4]triazolo[1,5c]pyrimidin-2-yl)sulfonyl]amino]benzoic acid

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

New claims 23, 24, 26-28, and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Johnson et al⁹, Agbaje et al (US 6,165,939), Novartis AG (WO 98/09525), Harvey et al¹⁰, and Steckel et al¹¹.

Johnson et al, again, disclose sequential application of glufosinate (glf) with a variety of other herbicides in glufosinate tolerant soybean. Those now excluded from the claims are: pendimethalin (B1.4), imazethapyr (A3.2), sulfentrazone (A4.4), flumioxazin (B1.15), sethoxydim (B3.1), and flumiclorac (B2.7). This reference is now used to show the utility of combining any secondary herbicide with glufosinate.

Agbaje et al, again, teach compositions comprising glufosinate in combination with various secondary chloroacetamide and triazine herbicides, which may be further combined with additional herbicides (col 9, line 38 through col 10, line 35).

Novartis, again, teaches the utility of phospho-herbicides such as glufosinate and glyphosate in synergistic combination with additional herbicidal agents for the control of weeds in phospho-

⁹Johnson et al. CROPU Abstract 1998-88956 of "Weed control programs in glufosinate-tolerant soybean" *Res. Rep. North Cent. Weed Sci. Soc.* (54,234-35). 1997.

¹⁰Harvey, et al. CROPU Abstract 1996-90386, of "Soybean herbicide studies", *Res. Rep. North Cent. Weed Sci. Soc.* 52, 316-20. 1995.

¹¹Steckel et al. CROPU Abstract 1996-90678 of "Weed control in glufosinate tolerant soybeans" *Res. Rep. North Cent. Weed Sci. Soc.* (52, 336-38). 1995.

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herbicide resistant crops (p. 1). Specifically disclosed secondary herbicides in the abstract include propaquizafop (B4.5) and norflurazon (B1.13), neither of which has been excluded by the proviso statement, in addition to: prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide (B1.7), metolachlor (B1.5), fluometuron, atrazine, clodinafop, ametryn, terbutylazine, simazine, prometryn, and four additional agents (NOA-402989 and compounds I-III).

Harvey et al, again, teach herbicides in various combined and sequential treatments for soybean crops.

Steckel et al, again, teach glufosinate, among other herbicides, applied alone or in various combinations for the control of weeds in glufosinate tolerant soybeans.

Again, one of ordinary skill in the art would be motivated to combine these references because each discloses a variety of herbicides which may be used in combination with others for weed control in soybeans, especially glufosinate resistant soybeans.

Thus, again, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have used applicants' elected glufosinate together with an additional herbicidal agent (or applied in sequence) for the control of weeds in glufosinate resistant soybean because the prior art teaches that it was well known to control weeds in glufosinate tolerant crops by application of glufosinate and additional secondary herbicides. One skilled in the herbicidal art would be able to select an appropriate secondary herbicide based upon the susceptibility of both the crop, and the weeds to be controlled, to the second herbicide. Further, it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose in order to form a third composition that is to be used for the very same purpose; the idea of

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combining them flows logically from their having been individually taught in the prior art. In re Kerkhoven, 205 USPQ 1069. One of ordinary skill in the art would have the requisite skill to select appropriate secondary herbicides based upon the known herbicidal spectrum of activity of the second herbicide to enhance the herbicidal utility of the combination.

In the declaration, the data presented in Tables 1, 2, 5, and 8 pertains to the elected species comprising glufosinate (A1.2) in combination with lactofen (B2.5), alachlor (B1.8), haloxyfop (B4.4), and trifluralin (B1.1). The remainder of the tested species are either nonelected (i.e., not A1.2), or lie outside the scope of the claims as amended by the proviso statement of claim 23. With respect to the composition comprising glufosinate and trifluralin (Table 8), the difference between the observed and expected values is slight (99% vs 96%), and is near 100% control. The Colby method (see the reference cited in the specification) is not considered reliable in this range, but is most accurate when the percent control is closer to 50%. Thus applicants have presented data which demonstrate synergistic results for glufosinate in combination with one species from each of the B2, B3, and B4 classes. Claims drawn to these species (lactofen, alachlor, haloxyfop) will be allowable.

Objective evidence of nonobviousness must be commensurate in scope with the scope of the claims. In re Tiffin, 171 USPQ 294. A showing limited to a single species can hardly be considered probative of the invention's nonobviousness in view of the breadth of the claims. The data of record is incommensurate in scope with claims drawn to the various B groups.

No claim is allowed.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and

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invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103c and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mark Clardy whose telephone number is (703) 308-4550.



S. Mark Clardy
Primary Examiner
AU 1616

March 7, 2003